

Amendments to the Claims

Claim 1 (Previously amended): Seed of maize inbred line designated PH51H, representative seed of said line having been deposited under ATCC Accession No. PTA-4261.

Claim 2 (Original): A maize plant, or parts thereof, produced by growing the seed of claim 1.

Claim 3 (Previously amended): The maize plant of claim 2, wherein said plant has been detasseled.

Claim 4 (Previously amended): A tissue culture of regenerable cells or protoplasts from the plant of claim 2.

Claim 5 (Previously amended): The tissue culture of claim 4, cells or protoplasts of the tissue culture being from a tissue source selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, silks, flowers, kernels, ears, cobs, husks, and stalks.

Claim 6 (Previously amended): A maize plant regenerated from the tissue culture of claim 4, capable of expressing all the morphological and physiological characteristics of inbred line PH51H, representative seed of which have been deposited under ATCC Accession No. PTA-4261.

Claim 7 (Original): A method for producing a first generation (F₁) hybrid maize seed comprising crossing the plant of claim 2 with a different inbred parent maize plant and harvesting the resultant first generation (F₁) hybrid maize seed.

Claim 8 (Previously amended): The method of claim 7 wherein the inbred maize plant produced by growing the seed of inbred line PH51H is the female or male parent.

Claim 9 (Currently amended): An F₁ hybrid seed produced by the method of claim 7, wherein said hybrid seed comprises a single set of maize chromosomes of PH51H ~~crossing the inbred maize plant according to claim 2 with another, different maize plant.~~

Claim 10 (Original): An F₁ hybrid plant, or parts thereof, grown from the seed of claim 9.

Claim 11 (Previously amended): The maize plant, or parts thereof, of claim 2, wherein the plant or parts thereof have been transformed so that its genetic material further comprises contains one or more transgenes that confer a qualitative trait.

Claim 12 (Previously amended): A method for producing a first generation (F₁) hybrid maize plant comprising crossing the maize plant of claim 11 with a second plant.

Claim 13 (Previously amended): The first generation (F₁) hybrid, or parts thereof, produced by the method of claim 12.

Claim 14 (Currently amended): A maize plant, or parts thereof, wherein at least one ~~ancestor parent or grandparent~~ of said maize plant is the maize plant of claim 2, said maize plant expressing ~~a combination of at least two~~ the following traits which are not significantly different from PH51H when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a maturity of 94-100 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, female yield, scatter grain resistance, tassel size, pollen shed, hybrid yield, stalk lodging resistance, test weight, plant height, and ear height.

Claim 15 (Previously amended): A method for developing a maize plant in a maize plant breeding program comprising: obtaining the maize plant, or its parts, of claim 2; and employing said plant or parts as a source of breeding material using plant breeding techniques.

Claim 16 (Previously amended): The method of claim 15 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

Claim 17 - 20 (Canceled)

Claim 21 (Currently amended): A maize plant, or parts thereof, having all the physiological and morphological characteristics of inbred line PH51H, representative seed of said line having been deposited under ATCC ~~accession~~ Accession No. PTA-4261.

Claim 22 (Currently amended): The maize plant of claim 2, wherein genes controlling male sterility have been transferred into said maize plant through crossing, that utilizes PH51H as a recurrent parent, and wherein said plant has ~~essentially~~ the same morphology and physiology of inbred line PH51H other than the trait of male sterility, when determined at a 5% significance level and when grown in the same environmental conditions as PH51H.

Claim 23 (Previously amended): A tissue culture of regenerable cells or protoplasts from the plant of claim 21.

Claim 24 (Previously amended): The tissue culture of claim 23, cells or protoplasts of the tissue culture being from a tissue source selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, silks, flowers, kernels, ears, cobs, husks, and stalks.

Claim 25 (Previously amended): A maize plant regenerated from the tissue culture of claim 23, capable of expressing all the morphological and physiological characteristics of inbred line PH51H, representative seed of which have been deposited under ATCC Accession No. PTA-4261.

Claim 26 (Original): A method for producing a first generation (F₁) hybrid maize seed comprising crossing the plant of claim 21 with a different inbred parent maize plant and harvesting the resultant first generation (F₁) hybrid maize seed.

Claim 27 (Previously amended): The method of claim 26 wherein the plant having all the physiological and morphological characteristics of inbred line PH51H is the female or male parent.

Claim 28 (Currently Amended): An F₁ hybrid seed produced by the method of claim 27, wherein said hybrid seed comprises a single set of maize chromosomes of PH51H ~~crossing the inbred maize plant according to claim 21 with another, different maize plant.~~

Claim 29 (Original): An F₁ hybrid plant, or parts thereof, grown from the seed of claim 28.

Claim 30 (Currently amended): The maize plant, or parts thereof, of claim 2, wherein the plant or parts thereof further comprise one or more transgenes, and wherein the morphology and physiology of the maize plant comprising the transgene is substantially the same as inbred maize line PH51H when determined at a 5% significance level and when grown in the same environmental conditions as PH51H.

Claim 31 – 33 (Canceled)

Claim 34 (Previously amended): A method for developing a maize plant in a maize plant breeding program comprising: obtaining the maize plant, or its parts, of claim 21; and employing said plant or parts as a source of breeding material using plant breeding techniques.

Claim 35 (Previously amended): The method of claim 34 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

Claim 36 (Canceled)

Claim 37 (Previously amended): A process for producing inbred PH51H, representative seed of which have been deposited under ATCC Accession No. PTA-4261, comprising:

- (a) planting a collection of seed comprising seed of a hybrid, one of whose parents is inbred PH51H said collection also comprising seed of said inbred;
- (b) growing plants from said collection of seed;
- (c) identifying said inbred PH51H plants;
- (d) selecting said inbred PH51H plant; and
- (e) controlling pollination in a manner which preserves the homozygosity of said inbred PH51H plant.

Claim 38 (Original): The process of claim 37 wherein step (c) comprises identifying plants with decreased vigor.

Claim 39 (Original): The process of claim 37 wherein step (c) comprises identifying seeds or plants with homozygous genotype.

Claim 40 (Previously amended): A method for producing a first generation (F1) PH51H-progeny maize plant, comprising:

- (a) crossing inbred maize line PH51H, representative seed of said line having been deposited under ATCC Accession No. PTA-4261, with a second maize plant to yield progeny maize seed;
- (b) growing said progeny maize seed, under plant growth conditions, to yield said first generation (F1) PH51H-progeny maize plant.

Claim 41 (Currently amended): A first generation (F1) PH51H-progeny maize plant, or parts thereof, having a single set of PH51H maize chromosomes produced by the method of claim 40.

Claim 42 (Currently amended): A method for producing an inbred maize plant comprising the ~~The~~ method of claim 40, and further comprising:
selfing said first generation (F1) PH51H-progeny maize plant for successive filial generations to generate a an PH51H inbred ~~progeny~~ maize plant.

Claims 43-46 (Canceled)

Claim 47 (Currently amended): The maize plant, or parts thereof, of claim 2, further comprising one or more mutant genes or transgenes that have been transferred into said maize plant by utilizing PH51H as a recurrent parent and wherein the maize plant, or parts thereof, are ~~essentially unchanged from~~ the same as inbred maize line PH51H when determined at a 5% significance level and when grown in the same environmental conditions as PH51H, for all traits except for those altered by said mutant genes or transgenes.

Claims 48-51 (Canceled)

Claim 52 (New): A method of making a PH51H maize plant comprising: introgressing a mutant gene or a transgene that encodes a product that confers insect resistance into an inbred maize line PH51H, representative samples of which have been deposited as PTA-4261.

Claim 53 (New): The maize plant produced by the method of claim 52.

Claim 54 (New): The maize plant produced by the method of claim 52 wherein said mutant gene or transgene is an insect resistance gene encoding a *Bacillus thuringiensis* polypeptide.

Claim 55 (New): A method of making a first generation hybrid maize plant comprising the method of claim 52 and further comprising crossing the PH51H maize plant of claim 52 with a second maize plant.

Claim 56 (New): The first generation hybrid maize plant developed by the method of claim 55.

Claim 57 (New): A method of making a PH51H maize plant comprising: introgressing a mutant gene or a transgene that encodes a product that confers herbicide resistance into an inbred maize line PH51H, representative samples of which have been deposited as PTA-4261.

Claim 58 (New): The maize plant produced by the method of claim 57.

Claim 59 (New): The maize plant produced by the method of claim 57 wherein said mutant gene or transgene is an herbicide resistance transgene selected from the group consisting of: a transgene conferring glyphosate resistance, a transgene conferring glufosinate resistance, a mutant gene or transgene conferring imidazolinone resistance and a mutant gene or transgene conferring sulfonylurea resistance.

Claim 60 (New): A method of making a first generation hybrid maize plant comprising the method of claim 57 and further comprising crossing the PH51H maize plant of claim 57 with a second maize plant.

Claim 61 (New): The first generation hybrid maize plant developed by the method of claim 60.

Claim 62 (New): A method of making a PH51H maize plant comprising: introgressing a mutant gene or a transgene that encodes a product that confers disease resistance into an inbred maize line PH51H representative samples of which have been deposited as PTA-4261.

Claim 63 (New): The maize plant produced by the method of claim 62.

Claim 64 (New): A method of making a first generation hybrid maize plant comprising the method of claim 62 and further comprising crossing the PH51H maize plant of claim 62 with a second maize plant.

Claim 65 (New): The first generation hybrid maize plant developed by the method of claim 64.

Claim 66 (New): A method of making a PH51H maize plant comprising: introgressing a gene that confers male sterility into an inbred maize line PH51H representative samples of which have been deposited as PTA-4261.

Claim 67 (New): The maize plant produced by the method of claim 66 wherein said gene is a mutant gene or transgene that confers male sterility.

Claim 68 (New): The maize plant produced by the method of claim 66 wherein said gene is a cytoplasmic gene and said maize plant comprises the nuclear genetic component of inbred PH51H and a cytoplasm that confers male sterility.

Claim 69 (New): A method of making a first generation hybrid maize plant comprising the method of claim 66 and further comprising crossing the PH51H maize plant of claim 66 with a second maize plant.

Claim 70 (New): The first generation hybrid maize plant developed by the method of claim 69.

Claim 71 (New): A method of making a PH51H maize plant comprising: introgressing a mutant gene or a transgene that encodes a product that modifies fatty acid metabolism, that decreases phytate content, or that modifies starch metabolism into an inbred maize line PH51H, representative samples of which have been deposited as PTA-4261.

Claim 72 (New): The maize plant produced by the method of claim 71.

Claim 73 (New): A method of making a first generation hybrid maize plant comprising the method of claim 71 and further comprising crossing the PH51H maize plant of claim 71 with a second maize plant.

Claim 74 (New): The first generation hybrid maize plant developed by the method of claim 73.

Claim 75 (New): The maize plant produced by the method of claim 52 wherein said maize plant exhibits no statistically significant variation in morphological or physiological characteristics from PH51H, other than variation caused by the addition of said mutant gene or transgene, and wherein significance is determined at a 5% significance level when grown in the same environmental conditions as PH51H.